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ABSTRACT

An estimated 44,340 longer term resident households in rural Kentucky were studied to identify the variables that explained changes in household income status between 1974-79. In a nine-county area of south-central Kentucky, rapid employment growth between 1974 and 1979 created new job opportunities, but employment growth did not benefit all households or reduce the area's overall poverty level. For households located in the study area continuously between 1974 and 1979, the average relative income changed very little. Although 28% reported improved relative incomes, another 22% lost ground when household members either retired or reduced their annual work hours. Households headed by elderly persons maintained their relative incomes because they depended on public or private income assistance programs that were indexed to the Consumer Price Index. Households headed by women had limited benefit from the area's employment growth. Most of the women who benefited from the job growth lived in households headed by men. About 21% of the longer term resident households were classed as poor in both 1974 and 1979. The heads of these households were typically older and had lower educational attainment than heads of households never classified as poor. Forty-eight references and the regression models used in the study are appended. (JHZ)

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Will Employment Growth Benefit All Households? A Case Study in Nine Nonmetro Kentucky Counties

Donald K. Larson
Claudia K. White

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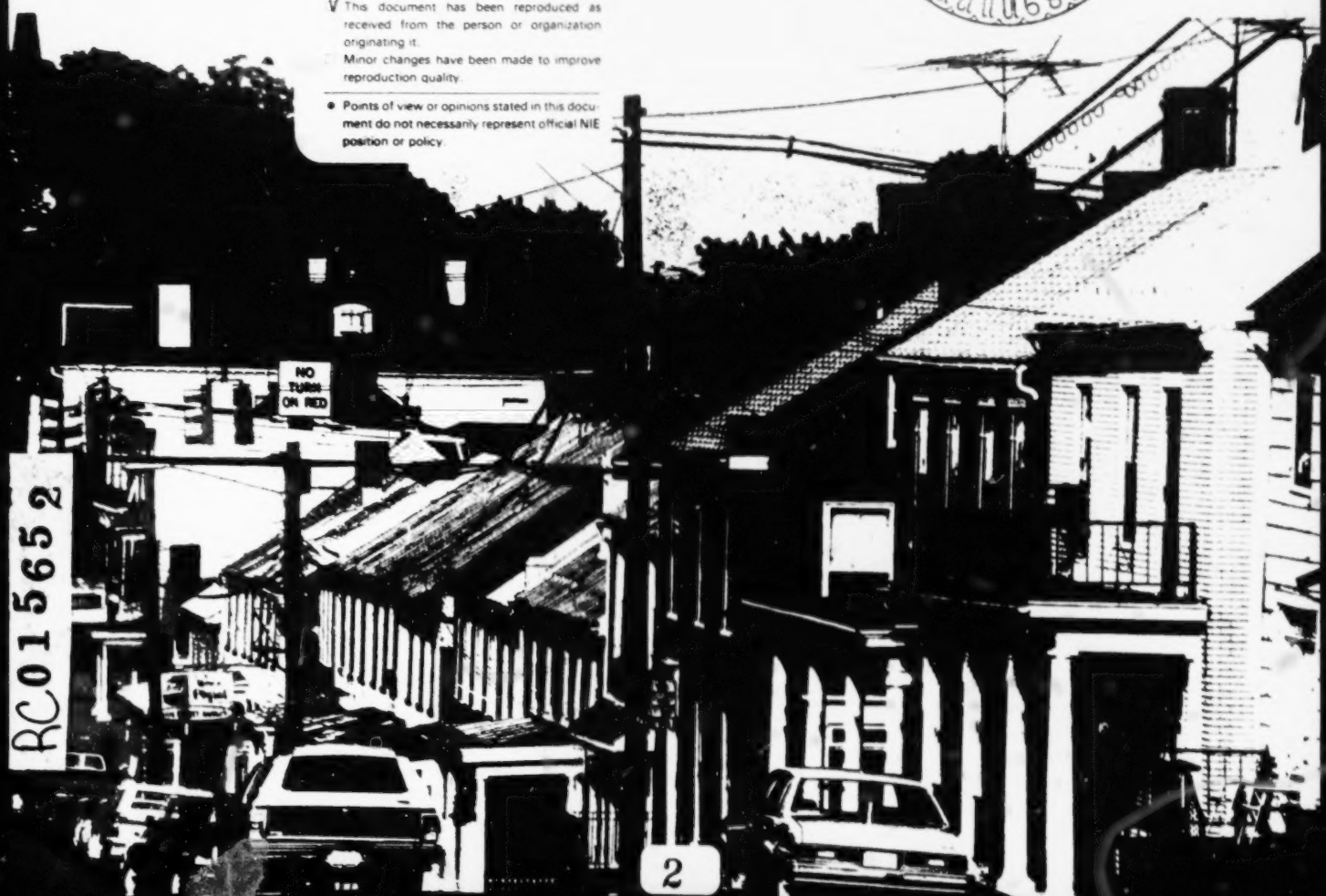

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Will Employment Growth Benefit All Households? A Case Study in Nine Nonmetro Kentucky Counties, by Donald K. Larson and Claudia K. White, Agriculture and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture. Rural Development Research Report No. 55.

Abstract

Overall employment growth in a rural area will probably not benefit all households or residents in that area. In a nine-county area of south-central Kentucky, rapid employment growth between 1974 and 1979 did create new job opportunities. However, only 18 percent of the households had members who took advantage of new jobs. The employment growth also did not reduce the area's overall poverty level. About as many households fell into poverty as left the poverty ranks during the study period. Some population groups, such as households headed by women, remained economically disadvantaged despite the area's growth. Other groups, such as the elderly, maintained their income status by relying on public and private income transfer programs.

Keywords: Rural employment growth, households, income status, poverty status, female heads of households, elderly heads of households, longer term residents, regression model.

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Washington, DC 20005-4788 January 1986

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Summary

Overall employment growth in a rural area will probably not benefit all households or residents in that area. In a nine-county area of south-central Kentucky, rapid employment growth between 1974 and 1979 did create new job opportunities. However, only 18 percent of the households had members who took advantage of the new jobs. Employment growth thus does not benefit all households, nor does it reduce the area's overall poverty level. About as many households fell into poverty as left the poverty ranks during the study period.

An estimated 44,340 longer term resident households in rural Kentucky that were demographically similar to all U.S. nonmetro households were analyzed. Here are some of the authors' specific findings:

- For households located in the study area continuously between 1974 and 1979, their average relative income level changed very little as a result of the area's employment growth. Although 28 percent reported improved relative incomes, another 22 percent lost ground when household members either retired or reduced their annual work hours.

- Households headed by elderly persons maintained their relative incomes because they were dependent on public or private income assistance programs which were indexed to the Consumer Price Index.

- Households headed by women had a limited benefit from the area's employment growth even though that growth increased the number of jobs available to women. Most of the women who benefited from the job growth lived in households headed by men.

- Expanded job opportunities benefited a limited number of poor households but did not lower the area's overall poverty level. About 21 percent of the longer term resident households were classed as poor in both 1974 and 1979.

Glossary

Statistical testing and primary sampling unit:

Significant difference — A comparison between two variables was statistically significant at the 95-percent confidence level in most cases when the observed difference was greater than two times the standard error of the difference. The variables tested were in the form of totals, ratios, percentages, dollar values, and so forth.

Primary sampling unit — Primary sampling units (PSU's) are associated with the frame sample. For the list frame, establishments were the PSU's; for the area frame, land segments of varying size were the PSU's. PSU's serve as the base for deriving variances, as opposed to observations, in a multiframe survey design.

Household and related terms:

Household — A group of persons not necessarily related by blood or marriage, whose usual place of residence is in a house, an apartment, a group of rooms, or a single room occupied as separate living quarters.

Existing household — The household existed in both 1974 and 1979 regardless of its location, and the head or spouse or both in 1974 were still present during January 1980.

Longer term residents — Members of those households who lived in the nine-county area during both 1974 and 1979 where the head or spouse or both in 1974 were still present during January 1980.

Newer residents — Members of those households existed in both 1974 and 1979, but the household was located outside the study site in 1974. Head or spouse or both in 1974 were still present during January 1980.

New households — Households which did not exist in 1974, and households where the head or spouse or both in 1974 were not the head of the household in January 1980.

Linked households — The household contained at least one person who was employed by a list frame establishment that participated in the survey.

Nonlinked households — The household contained no members who were employed by a list frame establishment that participated in the survey. All adult members of the household were either all unemployed, out of the labor force, self-employed, employed by an establishment not on the list, employed by an establishment on the list that refused to participate in the survey, or employed outside the study site.

Persistently low income county — The county's per capita income was in the lowest fifth of all nonmetro counties in 1969 and 1979.

Survey sample design:

List frame — The list frame sample was comprised of a list of private-sector establishments and government units located in the nine-county area. A subsample of employees was drawn from the surveyed list frame establishments which subsequently became the list frame sample of households.

Area frame — The area frame consisted of a two- stage stratified cluster sample, where the first stage involved sampling segments and the second stage involved sampling establishments and households. The area frame provided a sample of establishments and households not identified by the list frame. The area frame and list frame together represented the total population of establishments and households.

Will Employment Growth Benefit All Households? A Case Study in Nine Nonmetro Kentucky Counties

Donald K. Larson and Claudia K. White*

Introduction

Many local officials in nonmetro areas welcome employment expansion because it is perceived to improve the general well-being of local residents. Enhancing the well-being of all rural residents, particularly the disadvantaged, is one major objective of Federal rural development efforts *(46)*.[1] Income is frequently used to reflect household or family well-being, and changes in income are often used as a measure of the effects of employment growth *(24)*. Exactly how employment growth is distributed among the population and the resulting effect on income distribution, however, have not been fully explored, even though some segments of a population may not benefit from increased job opportunities *(20,28,31)*.

We identified the variables that explained changes in household income status between 1974-79 in a nine-county area in south-central Kentucky. "Income status" represents a relative measure of the income relationship between households. We examined the role that employment expansion played in explaining the change in income status. The period 1974-79 saw rapid employment growth in the study area. We gave special attention to the extent that growth in job opportunities affected the area's economically disadvantaged households, particularly longer term households that existed in the study site in both 1974 and 1979. The 1979 data, collected in January 1980, are the most recent available for a study of this nature in nonmetro Kentucky.

Employment growth is considered an important instrument for removing rural areas from economic stagnation and enhancing the general well-being of rural residents. While employment expansion will increase aggregate income *(30)*, two questions remain. How will that increased income be distributed? What effect will it have on the income status relationship one household, especially a longer term household, has with other households in the same general area?

Many nonmetro communities or areas have gained in aggregate or per capita income *(1, 3, 12, 16, 23, 25, 27, 30)*. When a research focus shifts to the effects of employment growth on individual or household income, the outcomes vary considerably. Studies that have focused on income distribution suggest some segments of the population received little or no income gains from employment growth *(1, 2, 5, 18, 23, 25, 26, 29)*. For example, there was no change in income gains by heads of households in an area where employment grew compared with a nongrowth area *(1)*. Yet, other studies have shown a more equal income distribution resulting from expanded job opportunities *(9, 17, 19, 24, 32, 47)*.

Some earlier studies attempted a distributional analysis of employment growth by using aggregate income distribution data, but the findings were questionable because factors other than employment growth can alter income distribution among population segments *(28, 33)*. For example, Government transfer payments measured on a per capita basis grew nearly 200 percent between 1969-77 in the nonmetro South *(14)*. These payments could affect the distribution of income without employment expansion. While these earlier studies have provided useful insights and plowed unbroken ground, empirical gaps still remain concerning the distributive effects from employment growth, particularly the effects

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[1] Italicized numbers in parentheses identify items in the References at the end of this report.

on household income status and poverty status. Given the diversity among nonmetro areas, findings may vary widely. Thus, generalizations about the distributional effects of employment growth on household income status require an examination of different nonmetro areas. This study attempts to fill one part of that empirical gap on the distribution of benefits resulting from rapid employment growth by studying one type of nonmetro economy.

Study Site and Data

This report's data represent a cross-section of households residing in Clay, Clinton, Knox, Laurel, McCreary, Pulaski, Russell, Wayne, and Whitley counties in Kentucky during January 1980 (fig. 1).[2] The area in 1980 had approximately 76,400 households with 226,800 people *(34, 35, 45)*. Between 1970 and 1980, the area's population grew about 30 percent, 2.5 times the national growth rate. The area had a very small minority population. Between 1970 and 1979, employment increased 44 percent, with the greatest employment growth in manufacturing, wholesale and retail trade, mining, and services *(6)*. Although this area's service sector expanded rapidly during our study period (1974-79), the local economy depended heavily on manufacturing. The area's agricultural sector was a relatively small source of employment. All the counties except Laurel County were classed as persistently low-income counties in 1969 *(8)*. Six counties (Clay, Clinton, Knox, McCreary, Russell, and Wayne) retained this designation in 1979, despite the area's impressive employment growth during the seventies *(15)*.

Methodology

We examined two aspects of the local population in our nine-county study area: households and the relative income status of those households.

Households

The individual, household, family, and community are units frequently used in past research efforts for studying the effects of employment growth on income distribution *(4, 9, 10, 17, 19, 21)*. For this report the household is the appropriate unit for analysis because about 10 percent of the surveyed units contained persons living together who were unrelated; family, by definition, comprises persons who are related by blood or marriage. The sample households are representative of the community in January 1980, but we do not have a representative sample of the communities' households for 1974. The individual is too narrow a concept because it ignores customary dependency relationships among individuals in a household. For example, the decision on how income is spent often stems from joint decisions of household members. Also, earnings from two or more working members are often pooled in a household unit; thus, the income of a single member may not reflect the relative economic status of all members of the household.

Figure 1
Counties in Kentucky study area

Relative Income Status

Researchers have developed several methods of measuring economic status *(4, 10, 11, 13, 21, 38, 39)*. We decided that the most appropriate measure for our analysis was a ratio of total nominal household income divided by an appropriate U.S. official poverty threshold value.[3] This measure represents a household's relative income status that has the following general form:

$$\text{Relative income status} = \frac{HNI_i}{HPT_i} - \frac{HNI_i}{HPT_i}$$

[2] For details about the sample design, see *(6)*. The survey used a randomly stratified multiple-frame design.

[3] The Bureau of the Census' standard poverty thresholds for 1974 and 1979 were used as the ratios' denominators *(36, 37)*.

where

HNI = total nominal income of household, all sources,
HPT = U.S. official poverty level for household in analysis,
i = 1979, the year of the survey data on income, and
j = 1974, the survey's base time period.

A similar measure has been used in a recent research project conducted by the University of Michigan *(10, 21)*. This ratio takes into account both the effects of changes in income status (such as employment) and household composition (such as number of household members); this latter effect is not reflected by total money income *(21)*. By using the U.S. official poverty standards in the denominator, the ratio further accounts for household economies of scale in consumption and other basic needs.

Characteristics of Households

The Kentucky household survey represents an estimated 61,250 households in January 1980, containing nearly 175,000 persons of all ages (table 1). The area's households were about 99 percent white and not of Hispanic origin. The households averaged 2.8 persons, which was similar to the national average size of all nonmetro households. Nearly 75 percent of the household members were of labor force age, that is, adults 16 years of age and older at the time of the survey *(6)*.

Mean household income in the study site for 1979 was about $12,000, less than $5,000 below the mean for all U.S. nonmetro households *(40)*. Over half of the surveyed households had a total income in 1979 under $10,000; the median income was $9,500 (table 1). The surveyed households contained an average of 1.1 income earners, well below the national average of 1.6 *(41)*. Among the surveyed households, 28.5 percent had no earners in 1979, more than double the national level of 14 percent *(41)*. Nearly 28 percent of the surveyed households were classed as poor in 1979, more than double the 12-percent level for all U.S. nonmetro areas and much higher than the 18-percent rate for nonmetro Kentucky in 1979 *(36)*. The relatively high number of households without any earner contributed to the relatively low average household income and the relatively high incidence of poverty among the surveyed households for 1979. Also, wage levels of most of the area's employers were below the national average *(6)*.

The surveyed households had an estimated combined aggregate income of about $737 million for 1979. Most of that, about 80 percent of the $737 million, came from various wage and self-employed jobs held by household members in all households and in households which were not poor (fig. 2, charts A and B). Although income from retirement was relatively small overall, this income source was important among households where members did not work during 1979.

Compared with nonpoor households, poor households had a different pattern of income sources in 1979. Aggregate income came about equally from earnings and retirement sources among households classed as poor in 1979 (fig. 2, chart C). Income from earnings and retirement made up 35 percent and 32 percent, respectively, of the aggregate income received by poor households. Public assistance was also an important source of economic support among poor households at more than 20 percent of aggregate income.

Most of the surveyed heads of households were men who had less than a high school education (table 1). Household heads were on average 48 years old and had finished just less than 10 years of formal schooling. Nearly 25 percent of the area's household heads were classed as elderly; that is, the head was 65 years or older at the time or the survey. The area's percentage of households headed by elderly persons closely resembled that for the Kentucky and U.S. nonmetro areas in 1979 *(42, 44)*.

The central objective of the analysis is to determine how the area's longer term resident households, those sample households located in the study site in both 1974 and 1979, benefited from the area's employment growth.[4] These households are one of the concerns of rural economic development policy. Some jobs created during this 5-year period were taken by persons in newly formed households as well as persons in existing households. Among all surveyed households, about 15 percent, or 9,270 were "newly formed households," that is the household unit did not exist in 1974 (table 2). These households included two groups. The first were households formed after 1974. The household head was typically a married man, a new entrant to the labor force, and 22 to 29 years old. If children were present in the

[4] A household was defined to exist in both time periods if the head in 1979 was also the head in 1974 or was the spouse of a deceased 1974 head. No 1974 income data were collected for households which did not conform to this rule.

Table 1—Household characteristics, nine-county Kentucky area, nonmetro Kentucky, and U.S. nonmetro areas, January 1980

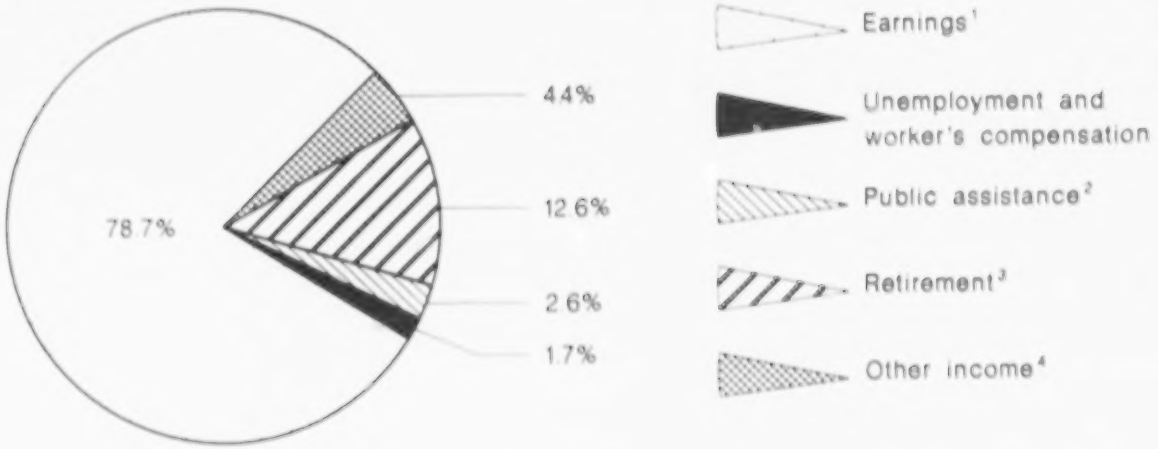
Characteristics	Unit	Nine-county Kentucky area	Nonmetro Kentucky[1]	U.S. nonmetro[2]
Total households	Number	61,520	689,090	19,912,700
Total persons, all ages	do.	174,930	1,972,700	55,516,190
Household economic status, 1979:				
Total income—[3]				
Mean	Dollars	11,980	15,080	16,930
Median	do.	9,500	11,960	14,040
Income status ratio—[4]				
Mean	Ratio	2.12	NA	NA
Median	do.	1.58	NA	NA
Poverty status—[5]				
Poor	Percent	27.6	18.3	12.0
Not poor	do.	72.4	81.7	88.0
Earners in household:				
None	do.	28.5	16.9	14.1
One	do.	38.3	38.1	33.5
Two	do.	29.0	37.1	41.4
Three or more	do.	4.2	7.9	10.8
Average number of earners	Number	1.1	1.4[6]	1.6
Size of household:				
One person	Percent	14.9	18.3	20.9
Two persons	do.	36.6	30.7	32.2
Three persons	do.	20.4	20.2	17.4
Four persons	do.	16.6	17.0	15.7
Five or more persons	do.	11.5	13.8	13.9
Average size	Number	2.8	2.9	2.8
Head of household:				
Sex—				
Male	Percent	81.2	77.2	75.5
Female	do.	18.8	22.8	24.5
Age, 1979—				
16-34 years	do.	28.9	29.6	28.8
35-54 years	do.	32.9	31.5	31.0
55-64 years	do.	13.8	15.6	16.1
65 years and older	do.	24.4	23.3	24.1
Average age of head	Years	48.5	NA	NA
Education level, 1979—				
Less than high school	Percent	59.9	NA	55.8
High school	do.	23.7	NA	13.5
Beyond high school	do.	16.4	NA	21.0
Average years of schooling completed	Years	9.8	NA	NA

NA Not available.
[1]Source: (44, 45).
[2]Source: (40, 41, 43).
[3]Total income before deductions received by all household members from all sources except the sale of land, buildings, stocks, or other capital assets during the year.
[4]Total household income divided by an appropriate U.S. official poverty threshold value for each household.
[5]We used the Bureau of the Census standard poverty thresholds for 1979 to determine poverty status of the surveyed households (36).
[6]Estimated.

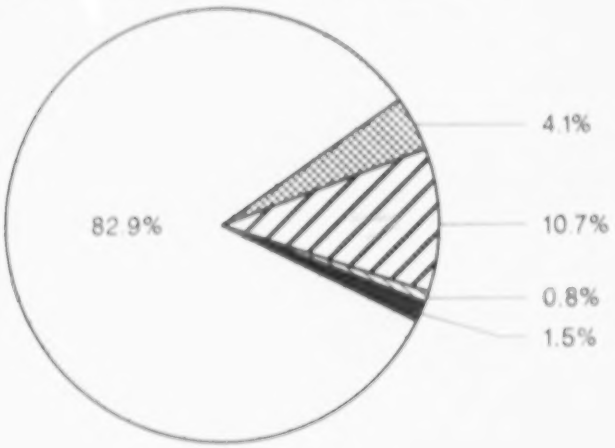
Figure 2

Distribution of Aggregate Total Household Income by Source

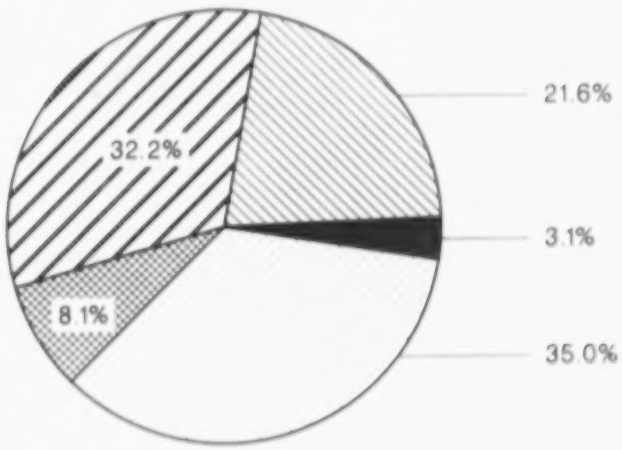
A. All Households



B. Households That Were Not Poor



C. Poor Households



1/ Wage and salary earnings; net income from nonfarm business, partnership, or professional practice; net income from a farm business.

2/ Aid to Families with Dependent Children, Federal and State Supplemental Security Income, and other public assistance.

3/ Social Security, railroad retirement, private pension and annuities, Government employee pensions, and military retirement.

4/ Veterans' payments, interest on savings bonds, alimony, dividends, child support, net rental income or royalties, estates or trusts, and any other sources not reported.

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household, they were 5 years old or younger. These households made up about 72 percent of all households in the newly formed category. The second group, or 28 percent, included households in which the head in January 1980 was not the head in 1974.[5] There was one exception to this second rule. If the current head was the widowed spouse of the household's head in 1974, who had since died, these households were placed in the existing household category.

Nine percent of the surveyed households were newer residents, that is, the household existed in both 1974 and 1980, but it was located outside the study site in 1974 (table 2). Typically, these households were headed by a man between 29 and 40 years old, who was, on average, better educated than heads of longer term resident households. However, the newer household heads did not have as much education as heads of newly formed households. The study site's job growth did provide employment opportunities for persons in these newer resident households *(6)*.

Noneconomic factors or other factors not related to jobs are frequently cited as reasons for relocation *(18, 22, 48)*. About 80 percent of the newer resident households, those that moved to the area between 1974 and 1980, reported they moved for reasons which were not directly related to jobs or money. As a group, these households reported lower average nominal and real incomes in 1979 than they had in 1974. Nearly 20 percent contained members who took a wage cut. Thus, their income status was affected by some events unrelated to the study site's expansion of jobs.

About 76 percent of all surveyed households were classed as longer term resident households (table 2). Heads of these households were typically male, over 50 years old, and had less than a high school education. The 1979 average income status for these households did not differ significantly from that of newly formed households, but it was significantly below that reported by the newer resident households.

Analytical Procedures

We examined in two phases the hypothesis that employment growth in the study site affected household income status. The first phase involved a multiple regression analysis to identify which factors best explained changes in household income status. The second phase was a tabular analysis showing the dynamics, or the distributional consequences, of those factors that significantly explained change in household income status.

We used seven categories of independent variables drawn from other research studies to explain changes in household income status *(5, 9, 10, 19, 21, 30)*. The variables reflected household structure, employment status, unearned sources of income, 1974 income levels, residency, demographic characteristics of the head of the household, and employer characteristics. We were particularly interested in the influence of employment status and employer characteristics in explaining changes in household income status. The remaining variables act as control variables; we knew from previous research that these variables affect changes in household income status, and we wanted to account for their effect in the regression model. To do so, we used a weighted least-squares multiple regression analysis; we transformed the expanded estimates so that the new weights summed to the number of raw observations.[6] The dependent variable was the change in household relative income status, which was defined in the section describing the methodology.

We performed the regression analysis in two stages. The first stage involved analyzing changes in household income status among those households linked with employers. These households were a smaller subset of the existing, longer term resident households. This stage was necessary to determine whether any employer characteristics were associated with changes in household income status. The Appendix presents a detailed explanation of the regression models. The first stage regression model contained five independent variables that were significant toward explaining changes in income status (app. table 1). Household size was one variable, and an increase in size resulted in a decline in income status. Three employment-related variables were also highly significant. Changes in number of workers within household, total annual hours worked by household members, and household head's real weekly wages were positively associated with changes in

[5] These households experienced a major structural or compositional change between 1974 and 1979. Because household composition change has a considerable effect on change in income *(21)*, 1974 income data were not collected from these households.

[6] We rescaled the expanded estimates to overcome the problem of generating greatly reduced standard errors on the regression coefficients. For further details on this method, see *(7)*.

Table 2—Characteristics of newly formed and existing households, January 1980

Characteristics	Unit	Newly formed household[1]	Existing households	
			Newer term resident[2]	Longer term resident[3]
Total households	Number	9,270	5,530	46,720
Household economic status, 1979:				
Total income—[4]				
Mean	Dollars	11,120	13,500	11,970
Median	do.	8,590	11,180	9,490
Income status ratio—[5]				
Mean	Ratio	2.17	2.23	2.10
Median	do.	1.58	1.82	1.54
Poverty status—[6]				
Poor	Percent	26.8	15.5	29.2
Not poor	do.	73.2	84.5	70.8
Earners in household:				
None	do.	13.6	14.8[7]	33.3
One	do.	47.8	42.9	35.6
Two	do.	36.9	37.1	26.4
Three or more	do.	1.7[7]	5.2[7]	4.7
Average number of earners	Number	1.3	1.4	1.0
Size of household:				
One person	Percent	16.6	6.9[7]	15.5
Two persons	do.	41.5	26.5	36.9
Three persons	do.	24.6	24.6	19.0
Four persons	do.	11.5	22.1	16.9
Five or more persons	do.	5.7[7]	19.9	11.7
Average size	Number	2.5	3.4	2.8
Head of household:				
Sex—				
Male	Percent	70.2	90.5	82.3
Female	do.	29.8	9.5[7]	17.7
Age, 1979—				
16-34 years	do.	81.4	36.2	17.7
35-54 years	do.	15.3	36.1	36.0
55-64 years	do.	2.1[7]	14.8[7]	16.0
65 years and older	do.	1.3[7]	12.9[7]	30.3
Average age	Years	28.8	42.3	53.1
Education, 1979—				
Less than high school	Percent	39.1	55.9	64.5
High school	do.	38.4	23.9	20.7
Beyond high school	do.	22.5	20.2	14.8
Average years of completed schooling	Years	11.4	10.8	9.4

[1]Newly formed after 1974—did not exist during 1974.
[2]The household existed outside the study area during 1974.
[3]The household existed within the study area during 1974.
[4]Total income before deductions received by all household members from all sources except the sale of land, buildings, stocks, or other capital assets during the year.
[5]Total household income divided by an appropriate U.S. official poverty threshold value for each household.
[6]The Bureau of the Census standard poverty thresholds for 1979 were used to determine poverty status of the survey households (36).
[7]Estimate based on fewer than 10 unweighted observations.

income status. For example, a household's relative income status improved when more members were working in 1979 than were working in 1974. The fifth independent variable was households whose real 1974 income was $19,000 or more. This variable had a significantly negative coefficient that indicates these households had smaller income status changes than households in the third compared group.

None of the employer characteristics was significantly associated with explaining changes in a household's relative income status in the first stage regression model (app. table 1). We observed substantial variation in wages paid full-time workers by establishment type, size, general wage level, and employment growth status. Because employer-linked households were widely scattered among these different employer characteristics, variations among these groups probably do not explain changes in a household's relative income status. Few of the linked workers changed employers over the study periods. Thus, the employment growth process accommodated new entrants to the labor force but did not cause massive job changes for those employed in both time periods.

The second-stage regression analysis differed from the first in two important ways. First, the employer characteristics were dropped as independent variables. Second, unlinked households were added to see if their inclusion altered the significance of the remaining variables. This second stage included not only linked households, but also households where members were either all unemployed, out of the labor force, self-employed, employed by establishments not on the list, employed by establishments on the list that refused to participate in the survey, or employed outside the study site. All the variables that were significant in the first regression analysis were also significant in the second regression analysis (app. table 2).

Change in the household size variable had a negative sign (app. table 2); with all other variables held constant, an increase in household size results in a decline in income status. An opposite effect would occur with a decrease in household size. Changes in household income status and three other variables—change in employment, change in annual hours worked, and change in head's weekly real wage—were positively related. Thus, income status improved when additional household members became employed, already employed members worked more hours in 1979 than 1974, or the head's weekly wage level rose faster than the inflation rate over the 5-year period. The highest 1974 household real income level variable (the $19,000 and over group) was negatively related to omitted class of households, that is, the third 1974 household real income group.

However, regression model 2 contained two additional independent variables that were significant. Households headed by women and households reporting "other income" in 1979 but not in 1974 were significant variables in explaining changes in income status (app. table 2). The first of these two had a negative relationship with change in income status and the second had a positive association. We presented only five of the seven significant variables in the tabular analysis. Households reporting "other income" in 1979 but not in 1974 were excluded because the number of observations was not sufficient to draw any conclusions. We also excluded the variable representing the highest category of 1974 household real income. This variable had a negative relationship caused by persons leaving the work force, such as retirement. Had all four 1974 household real income variable categories been significant with their observed signs (app. table 2), then household income status would have been more equally distributed among the households. This situation would have then warranted an examination about the role the area's employment growth played in equalizing income status.

Factors Affecting Household Income Status

Employment growth is viewed by many Federal, State, and local government officials as one important way to improve the income of all rural residents *(46)*. The "all" implies that gains in income induced by employment expansion will be distributed equally among the residents and thus significantly improve the overall income status level. We studied 44,340 longer term resident households to determine whether or not employment growth in the Kentucky site was accompanied by a significant change in the average household income status between 1974 and 1979. We eliminated 2,380 longer term resident households (about 5 percent) from the analysis because of nonresponses regarding 1974 household income data. These nonresponses were a random event and not associated with any particular primary sampling unit or household characteristic.

Most of the longer term resident households we analyzed showed no appreciable change in income status between 1974 and 1979. Second, only a relatively small portion

of these households benefited directly from the area's expansion of jobs. However, the regression analysis shows those households that did benefit from employment growth had their income status gain significantly over the 5-year period.

Overall Change in Income Status

There was no significant relationship between the area's growth in job opportunities and the overall change in income status among the longer term resident households (table 3). The mean ratio change of -0.03 did not differ significantly from zero. This finding supports other research on this same topic *(5, 23)*. About 62 percent of these households had little or no change in their relative income status over the 5-year period. These findings also show that gains in income status among some households can be offset by declines among other households. The same proportion of households experienced large income status gains as experienced large income status losses. Researchers who used aggregate level data and arrived at a similar conclusion—industrial growth has no significant effect on household income—seemingly overlooked this result, that not all households will experience positive income gains during a period of employment expansion.

Table 3—Distribution of longer term resident households by change in relative income status, 1974-79

Item	Unit	Longer term resident households
Total	Number	44,340
Mean change in income status (1979 ratio minus 1974)	Ratio[1]	−0.03
Change in income status, 1974-79[2]	Percent	100.0
Large decrease	do.	3.6
Moderate decrease	do.	16.5
Little or no change	do.	62.4
Moderate increase	do.	13.6
Large increase	do.	3.9

[1]The average value of the differences between the 1979 poverty status and that for 1974.

[2]Poverty status change levels were defined as:
(a) Large decrease, ratio difference was equal to or less than −1.900;
(b) Moderate decrease, ratio difference was −0.600 to −1.899;
(c) Little or no change, ratio difference was −0.599 to +0.599;
(d) Moderate increase, ratio difference was +0.600 to +1.899;
(e) Large increase, ratio difference was equal to or greater than +1.900.

Distribution of Effects

The area's impressive job growth between 1974-79 was distributed among a relatively small proportion of the longer term resident households. Only 18 percent of these households had more workers in 1979 than in 1974 (table 4). Most of the longer term resident households were highly stable over the 5-year period. For example, almost 45 percent of these households had no change in number of members working. Household size remained unchanged among nearly 65 percent of these households. However, as verified by both the regression and tabular analyses, when a change took place, such as in employment or annual hours worked, a household's income status was significantly altered, either positively or negatively depending on direction of the change.

Despite the area's impressive job growth, some longer term resident households exhibited changes that ran counter to what one would expect from economic growth. For example, almost 10 percent of these households reported a decline in number of household members working (table 4). Twelve percent of the households reported reduced total annual hours worked, and nearly 10 percent reported a decline in the head's real weekly wage. This dynamic nature of employment status changes among some households can produce a negligible overall net effect on the area's average household income status.

In summary, the lack of a relationship between income status and the area's employment growth may be explained in at least three ways. First, employment among existing longer term resident households was generally stable. And, the expanded and contracted employment efforts of the 5-year period resulted in an insignificant change in overall relative income status. Second, about 28 percent of the households we analyzed had members who were not employed at anytime during the entire 5-year period. Thus, household income status hinged upon unearned sources of income, that is income sources that were apart from the expansion of the area's employment activity. Third, the survey data do not provide sufficient information to consider how newly formed households affected the overall average household income status. These households, which were excluded from the analysis, have claims on the area's employment growth and thus on the total income generated in the study area. However, there was no 1974 base income available for the newly formed households.

Also, we do not have any data on households that were located in the area during 1974 but left before 1979.

Households Apart from Employment

The literature suggests that individuals who do not benefit from the area's economic expansion may find themselves in a relatively poorer economic situation after employment opportunities expand *(30, 31)*. This argument carries over to households by implying that households containing persons who do not benefit from an area's employment growth may be relatively worse off economically after, than before, employment opportunities grew. About 28 percent of the longer term resident households were not directly affected by the area's employment growth because the head was not employed in both 1974 and 1979 (table 4). In the households with fewer workers, most often the head withdrew from the labor force after 1974 primarily to retire. This assertion merits attention because households that are adversely affected by employment growth should be the focus of policy and programs seeking to improve their income status.

Table 4—Distribution of existing, longer term resident households by factors affecting household income status, 1974-79

Item	Longer term resident households	Mean value change in income-status ratios, 1974-79
	Number	*Ratio value*
Total	44,340	−0.03[1]
	Percent	
Factors affecting household income status between 1974-79:		
Employment status and change—[2]		
No change in number working	44.8	−.160
More workers	17.8	.433[3]
Fewer workers	9.8	−.550[3]
None working in 1974 and 1979	27.6	.067
Total annual hours worked status and change—[4]		
Large decrease (−1,000 or more hours)	4.1	−1.108[5]
Moderate decrease (−200 to −999 hours)	7.9	−.288[3]
Little or no change (−199 to 199 hours)	23.5	−.222[3]
Moderate increase (200 to 999 hours)	5.9	.554[3]
Large increase (1,000 hours or more)	3.4	.465[5]
Not applicable households[6]	55.2	.075
Head's real weekly wage status and change—		
Large decrease (−$100 or more)	3.4	−.800[5]
Moderate decrease (−$30 to −$99)	6.1	−.200[3]
Little, no change (−$29 to $29)	15.1	.072
Moderate increase ($30 to $99)	12.0	.147[3]
Large increase ($100 or more)	4.8	.605[5]
Not applicable households[7]	58.6	−.082
Household size status and change—		
No change	64.5	−.052
More members	15.1	−.440[3]
Fewer members	20.4	.343[3]

[1] An average of the differences between the 1979 income status and that for 1974.
[2] Household members' change in employment status.
[3] The change differed significantly from zero.
[4] Change in annual hours worked pertains only to households where there was no change in members' employment status.
[5] Statistical test not performed because there were fewer than 30 unweighted observations.
[6] Households where employment status among members changed between 1974-79 and includes households where no member was working in both years.
[7] Includes those heads who were self-employed and heads who were not employed.

The analysis indicates that income status for households where the head was not employed in January 1980 was not significantly altered between 1974 and 1979. The income status for households with a nonworking head was significantly lower than that for households with employed heads in both 1974 and 1979 (table 5). But, the income status gap between households with employed and with nonworking household heads did not widen over the 5-year period. Why didn't the relative income status decline for those households with nonworking heads? We tried to answer this question by examining selected economic and noneconomic characteristics.

The regression analysis results show that change in income status among households headed by elderly persons was not significantly different from households where the head was 35 to 54 years old.[7] For the Kentucky study site, nonworking heads generally were males, elderly, and had less than a high school education (table 6). Their major source of economic support came from nonearned income sources. For example, about 80 percent of the households with nonworking heads reported that income came from retirement-related sources, largely Social Security. As expected, public assistance as an income source was also more prevalent among households where the head was not working. Social Security and Supplemental Security Income (the public assistance reported by most households headed by elderly persons) are indexed by the national Consumer Price Index, thus helping the elderly to maintain real income levels over time.

[7] The class of household heads 35 to 54 years old was the omitted group against which the household income status changes were tested (app. table 2).

Table 5—Relative income status among existing, longer term resident households by head's employment status, 1974 and 1979

Item	Average income status ratio for—[1]		
	1974	1979	Difference 1979-74
	Ratio value		
Head s employment status:			
Not working January 1980	1.269	1.217	−0.052[2]
Working January 1980	2.712	2.729	.017[2]

[1] Income status was defined as total household income divided by its appropriate U S. official poverty threshold.

[2] The difference between income status for 1974 and 1979 was not significantly different from zero.

Some households with nonworking heads contained other members, most often the spouse, who were working and who contributed substantially to household income. Wages of these working household members kept pace with general inflation over the 5-year period. Some households declined in size–had fewer members to support–thus, their income status improved. These factors together contributed to the finding that households headed by a nonworker maintained their relative income status; that is, they were not in a relatively poorer economic position than before employment growth took place over the 5-year study period.

These nonworking household heads can be generally considered as noncompetitors for jobs in the area's labor market *(30)*. The nonworking household heads' age structure suggests that many were probably retired or engaged in housework (table 7). Only a very small group were in the area's labor force but unemployed. Poor health was reported as a major factor limiting the ability to work by almost 51 percent of the nonworking household heads. Old age and poor health often go together. Among most male household heads under age 60, however, a health problem or condition was severe enough to prevent them from seeking employment during 1979. "Not interested in paid employment" was the next most important reason given by nonworking heads of households for not seeking employment. Most of these persons listed their current activity as retired.

Households Headed by Women, January 1980

The regression analysis shows that households headed by women had a significantly smaller change in income status over the 1974-79 period than did households headed by men (app. table 2). Over this 5-year period, the overall income status gap widened considerably between households headed by men and those headed by women. The average change in household income status among households headed by women was negative and signficantly different from zero (table 8). However, the widened income status gap between these groups was primarily the result of change in a household's composition. About 25 percent of the women who headed households in January 1980 were widowed sometime after 1974. Thus, the death of a male head of household could reduce the household income status in two ways: (1) by reducing the household's flow of earnings if he was working in 1974 or (2) by reducing the benefits paid to the surviving spouse if the deceased head was retired in 1974. No data are available on the

Table 6—Selected characteristics of existing, longer term resident households, by not working head and employed head, January 1980

Characteristics	Unit	Longer term resident households— Total	Head not working, January 1980	Employed head, January 1980
Total households	Number	44,340	17,750	26,590
Head of household:				
Sex—				
Male	Percent	83.2	70.0	92.0
Female	do.	16.8	30.0	8.0
Age—				
Under 35 years	do.	17.7	4.5[1]	26.5
35-54 years	do.	36.5	15.5	50.5
55-64 years	do.	15.1	13.4	16.2
65 years and older	do.	30.7	66.6	6.7
Average age	Years	53.0	65.8	44.5
Education completed—				
Less than high school	Percent	65.1	86.8	50.7
High school	do.	21.1	7.5	30.2
Beyond high school	do.	13.8	5.7	19.1
Average years of completed schooling	Years	9.3	7.6	10.5
Households reporting income from:				
Earnings[2]	Percent[3]	66.8	17.0	100.0
Unemployment and workers' compensation	do.	10.2	10.5	10.0
Public assistance[4]	do.	17.2	37.7	3.4
Retirements[5]	do.	39.9	80.3	12.9
Other[6]	do.	27.7	32.5	24.4
Average money income, 1979	Dollars	12,050	5,950	16,120
Average income status ratio for 1979	Ratio	2.1	1.2	2.7

[1]Estimate based on fewer than 10 unweighted observations.
[2]Income received from wages and salaries and net self-employment from farm or nonfarm businesses.
[3]Because some households received income from more than one source, percentages will not add to 100.
[4]Includes payments from Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), or other State or local public assistance.
[5]Income received from benefits such as Social Security; railroad retirement; or private, Government, or military pensions or annuities.
[6]Includes veterans' payments, interest on savings or bonds, alimony, dividends or stocks, child support, net rental income or royalties, estates or trusts, and any other source not already reported.

Table 7—Nonworking heads of existing, longer term resident households in January 1980: Current activity and reason not working

Item	Unit	Longer term resident household heads not working in January 1980
Total	Number	17,750
Current activity:		
Going to school	Percent	0.3[1]
Housework	do.	12.1
Retired	do.	65.6
Voluntary work	do.	2.3[1]
Unemployed	do.	2.6[1]
Other	do.	17.1
Reasons not looking for work	Number	17,290[2]
Discouraged worker[3]	Percent	7.8
Ill health	do.	50.8
Not interested in paid employment	do.	40.1
Interested in paid employment, but could not work[4]	do.	1.3[1]

[1]Estimate based on fewer than 10 unweighted observations.
[2]Excludes 460 households where head was unemployed in January 1980.
[3]Includes household heads who had stopped looking for work because they believed none was available.
[4]Includes household heads who were interested in paid employment but had to care for a child or a sick or aged adult or who had no transportation to and from a work place.

Table 8—Household relative income status and money income among existing longer term resident households by head's sex and composition status of the household, 1974 and 1979

Item	Total households	Average household—					
		Income status[1]			Money income		
		1974	1979	Difference (1974-79)	1974	1979	Difference (1974-79)
	Number	*Ratio value*			*Dollars*		*Percent*
Households headed by:							
Men (both years)	36,890	2.269	2.267	−0.002[2]	9,070	13,230	45.9
Women	7,450	1.523	1.354	−.169[3]	4,880	6,200	27.0
	Percent						
Both years[5]	74.8	1.447	1.371	−.076[2]	4,250	6,290	48.0
Sometime after 1974[6]	25.2	1.746	1.303	−.443[4]	6,730	5,930	−11.9

[1]Income status was defined for each year as total household income divided by its appropriate U.S. official poverty threshold.
[2]The value did not differ significantly from zero.
[3]The value did differ significantly from zero.
[4]Statistical test not performed because there were less than 30 unweighted observations. There were, however, more than 10 unweighted observations which provides some validity to the finding.
[5]The household was headed by the same woman in 1974 and in 1979.
[6]The household was headed by a man in 1974, but his widow took over sometime after 1974.

employment status of the former head of the household in 1974. However, the change in income status among households headed by women in both 1974 and 1979 did not differ significantly from that of households headed by men. Past research has shown that major compositional changes, such as change in marital status, greatly alter a household's income status *(21)*.

While the employment growth provided jobs for women in the area, the benefits of job expansion were less likely to affect households headed by women *(6)*. Among the longer term resident households reporting persons entering the labor force between 1974 and 1979, 12 percent were households headed by women as of January 1980.[8] Most women entering the labor force during the study period lived in a household headed by a man.

As expected from past evidence, there was a sharp income disparity between households headed by men and those headed by women (table 8). Women who headed households were most often not working, were elderly (65 years or older), and were more likely dependent on retirement benefits or public assistance for income support (table 9). The proportion of households headed by women reporting earnings for 1979 was just over half that for households headed by men. Households headed by women were typically smaller and had fewer persons of labor force age than households headed by men.

Alleviating Poverty

Rural economic development often has been advocated as a means to aid the economically disadvantaged *(46)*. The analysis that follows, based on the longer term resident households in our Kentucky study area, indicates that employment growth had a limited effect on alleviating poverty.

Household Poverty Status, 1974-79

We used Federal poverty thresholds to identify impoverished longer term resident households in both 1974 and 1979 *(36, 37)*. About 21 percent of the surveyed households were "poor" in both 1974 and 1979 (table 10); the proportion of poor households for 1979 did not differ significantly from that for 1974. These poor households represented about three-fourths of the poor in either 1974 or in 1979 or in both years. About 3,400 households escaped poverty between 1974 and 1979, but about an equal number became poor over the same

[8] There were too few observations to draw any conclusions about how employment growth affected the income status of households headed by women widowed sometime after 1974.

Table 9—Selected characteristics of existing, longer term resident households by sex of head, January 1980

Characteristics	Unit	Longer term resident households—		
		Total	Men as heads	Women as heads
Total households	Number	44,340	36,890	7,450
Persons per household, average	do.	2.8	3.0	1.8
Work status:				
Head employed, January 1980	Percent	70.0	66.3	28.6
Head not employed, January 1980	do.	30.0	33.7	71.4
Age of head:				
Under 35 years	do.	17.7	19.8	7.6[1]
35-54 years	do.	36.5	38.9	24.3
55-64 years	do.	15.1	15.1	14.7
65 years and older	do.	30.7	26.1	53.4
Average age	Years	53.0	51.2	62.1
Education of head:				
Less than high school	Percent	65.1	62.5	77.9
High school	do.	21.1	23.5	9.2[1]
Beyond high school	do.	13.8	14.0	13.0
Average years of completed schooling	Years	9.3	9.4	8.9
Households receiving income from:				
Earnings[2]	Percent[3]	66.8	72.5	38.7
Unemployment and workers' compensation	do.	10.2	10.8	7.4[1]
Public assistance[4]	do.	17.2	13.3	36.4
Retirement[5]	do.	39.9	35.1	63.3
Other[6]	do.	27.7	27.8	26.9

[1]Estimate based on fewer than 10 unweighted observations.
[2]Income received from wages and salaries and net self-employment income from farm or nonfarm business.
[3]Because some households received income from more than one source, percentages will not add to 100.
[4]Includes payments from Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), or other State or local public assistance.
[5]Income received from benefits such as Social Security; railroad retirement; or private, Government, or military pensions or annuities.
[6]Includes veterans' payments, interest on savings or bonds, alimony, dividends or stocks, child support, net rental income or royalties, estates, or trusts, and any other source not already reported.

Table 10—Existing, longer term resident households by poverty status, 1974 and 1979[1]

Item	Longer term resident households	Poverty status in 1979	
		Poor	Not poor
	Number		
Total	44,340	12,940	31,400
Poverty status in 1974			
Poor	12,780	9,390	3,390
Not poor	31,560	3,550	28,010

[1]Poverty thresholds were derived using the U.S. Census official levels for the years 1974 and 1979 and based on the following criteria: sex and age of the head of the household, size of the household, and total household money income (*36, 37*).

time period, the number of households escaping poverty did not differ significantly from the number of households entering poverty between 1974 and 1979.

Household Attributes by Poverty Status

Old age, low education, female heads, and low employment rates are attributes typically associated with a poor household *(21, 36, 37)*. The longer term resident households classed as poor in 1974 or 1979 or both years exhibited many of these characteristics (table 11). Within households that either remained in, escaped, or entered poverty between 1974 and 1979, the head typically was older and had a lower educational attainment than heads among households classed as never poor.

Households classed as poor both years and those entering poverty had a lower average number of earners per household. Also, these households had no member employed in higher paying executive, administrative, managerial, or professional occupations. Households headed by women were more likely to be poor, and more

Table 11—Selected characteristics of existing longer term resident households by poverty status, 1974-79

Characteristics	Unit	Longer term resident households	Poverty status			
			Remained in poverty, 1974-79[1]	Escaped poverty, 1974-79[2]	Entered poverty, 1974-79[3]	Not in poverty, 1974-79[4]
Total	Number	44,340	9,390	3,390	3,550	28,010
Average size of household	do.	2.8	2.7	2.5	2.7	2.9
Average number of earners in household, 1979	do.	1	.4	.4	.8	1.3
Income-status ratio:[5]						
1979 average	Index	2.11	.62	1.44	.73	2.87
1974 average	do.	2.14	.61	.68	1.57	2.91
Change in income status ratio, 1979-74	do.	−.03	.01	.76	−.84	−.04
Head of household						
Sex of head—						
Male	Percent	83.2	72.4	85.5	62.3	88.9
Female	do.	16.8	27.6	14.5	37.7	11.1
Age, 1979—						
16-34 years	do.	17.7	11.6	9.7[6]	13.0[6]	21.4
35-54 years	do.	36.5	28.9	21.3[6]	33.3	41.2
55-64 years	do.	15.1	14.6	11.5[6]	10.9[6]	16.3
65 years and older	do.	30.7	44.9	57.5	42.8	21.1
Average age	Years	53.0	57.9	62.5	58.4	49.6
Education level, 1979—						
Less than high school	Percent	65.0	91.3	82.0	82.3	52.0
High school	do.	21.1	6.2[6]	6.8[6]	17.7[6]	28.3
Beyond high school	do.	13.9	2.5[6]	11.2[6]	0	19.7
Average years of completed schooling	Years	9.3	7.3	8.1	7.6	10.4
Major occupation, 1979—						
Executive, administrative, managerial, professional	Percent	7.6	0	0	0	12.1
Technical, marketing, sales, clerical, service	do.	21.9	11.4	16.5[6]	8.5[6]	27.8
Production and related occupations	do.	30.4	13.5	26.0	22.2	37.6
Head not employed[7]	do.	40.1	75.1	57.5	69.3	22.5
Source of income, 1979:[8]						
Earnings[9]	Percent	66.8	34.3	44.5	33.3	84.7
Unemployment and workers' compensation	do.	10.2	5.9[6]	4.1[6]	12.4[6]	12.1
Public assistance[10]	do.	17.2	52.3	20.6[6]	30.4	3.3
Retirement[11]	do.	39.9	53.5	66.4	49.0	30.9
Other[12]	do.	27.6	25.3	31.3	11.8[6]	30.0

[1]Households classed as poor in both 1974 and 1979. [2]Households classed as poor in 1974, but not poor in 1979. [3]Households classed as not poor in 1974, but poor in 1979. [4]Households classed as not poor in either 1974 or 1979. [5]Income status ratio defined as total household income divided by appropriate Federal poverty threshold value. [6]Estimate based on fewer than 10 unweighted observations. [7]Head was not employed in either 1979 or in both 1974 and 1979. [8]Because some households received income from more than one source, percentages will not add to 100. [9]Income received from wages and salaries and net self-employment income from farm or nonfarm business. [10]Includes payments from Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), or other State or local public assistance. [11]Income received from benefits such as Social Security, railroad retirement, or private, Government, or military pensions or annuities. [12]Includes veterans' payments, interest on savings or bonds, alimony, dividends or stocks, child support, net rental income or royalties, estates or trusts, and any other source not already reported.

households headed by women entered than escaped poverty over the study period.

A household's poverty status can change from year to year depending on changes in any number of economic and noneconomic factors *(10, 13, 21)*.[9] The nine-county Kentucky household data support this finding that being poor need not be a permanent condition. Because a few households changed their poverty status between 1974 and 1979, we will examine whether the area's employment growth aided these households in changing their poverty situation.

Households Escaping Poverty

Among the area's 3,390 households that were poor in 1974 but not poor by 1979, the area's employment growth was but one of several factors that lifted them out of poverty. About 29 percent of these households had an increase in the number of household members working between 1974 and 1979 (table 12). The heads of these households were most often a person under 65 years of age.

About 30 percent of these 3,390 households had fewer members to support in 1979 than in 1974. As a group, average household size for 1979 did not differ significantly among the four poverty status groups shown in table 11. When a member leaves a household, the poverty threshold applied to that household is lower. If there is little or no change in household income as a result of the member's leaving, then the household can escape poverty.[10] Nearly half of the households escaping poverty had no one working in either 1974 or 1979; among these households the head was 65 years and older. Participation in the public welfare programs, mainly SSI, seemingly raised these households from poverty.[11]

Households Poor in both 1974 and 1979

Government transfer payments, or public assistance, do not always assure that a household can escape from poverty. But, Government transfer payments may have kept the poverty gap from widening over the period. Among the 9,390 longer term resident households classed as poor in both 1974 and 1979 (table 11), about 37 percent received public assistance payments in 1974; by 1979, 52 percent reported this source of income. While these percentages differed significantly, the average income status ratios of 0.61 in 1974 and 0.62 in 1979 did not differ significantly. Nearly 65 percent of the households reportedly receiving public assistance payments in 1979 were poor in both years.

Among the longer term resident households classed as poor in 1974 and 1979, 32 percent had at least one member who was employed during 1979 (table 12).[12] About 42 percent of these working-poor households had members of the household who entered the labor force after 1974. Among these households with members in the area's labor market, the household heads typically were male, were under 65 years of age, had less than an eighth grade education, and frequently were working for wages at or below the 1979 U.S. minimum wage. Their relatively low educational attainment probably was a factor limiting the wages they received. Also, none of the heads of these households reported having participated in a formal job training program.

Providing support for fewer household members did not necessarily lift a household out of poverty. Among those households where the number of members declined between 1974 and 1979, about 29 percent were classed as poor in both years (table 12). As household size declined over this period, the household's income situation also deteriorated, suggesting possibly that the member who left the household was working in 1974 or that public assistance payments were reduced by an amount that kept the household in poverty.[13]

Households Entering Poverty

An estimated 3,500 households became poor by 1979 (table 11). Three events seemingly caused these households, which were not poor in 1974, to become poor by

[9] The terms "temporary" and "permanent" poor often appear in the literature to distinguish between cases that move in and out of poverty from cases seemingly trapped in poverty *(21)*. Annual data are required to make these distinctions, but annual income data were not collected for the years between 1974 and 1979 in the Kentucky survey. Although these distinctions could not be exactly identified from the survey data, the two point estimates suggest that both temporary and permanent members of the poverty population probably exist in the study site.

[10] The number of households receiving public assistance payments was too small to draw any conclusions.

[11] These households did not report having SSI payments in 1974 but did so in 1979.

[12] These households can be referred to as containing the area's "working poor." Overall, these households were about 7 percent of all of the area's longer term resident households (table 12).

[13] There were too few households in this group reporting public assistance payments in both 1979 and 1974 to draw any conclusions about these effects on change in household income status.

Table 12—Existing longer term resident household employment and household size, by poverty status, 1974-79

Item	Longer term resident household	Poverty status, 1974 and 1979			
		Remained in poverty, 1974-79[1]	Escaped poverty, 1974-79[2]	Entered poverty, 1974-79[3]	Not in poverty, 1974-79[4]
			Number		
Total	44,340	9,390	3,390	3,550	28,010
			Percent		
Employment status of household members:					
Number of earners did not change	44.8	18.8	14.2[5]	25.6	59.6
More earners	17.8	13.4	28.6	5.4[5]	19.5
Fewer earners	9.8	9.3	8.6[5]	26.2	8.1
No earners both periods	27.6	57.5	48.6	42.8	12.8
Household size:					
Same number of members	64.5	61.2	62.8	65.6	65.7
More members	15.1	10.8	6.8[5]	16.9[5]	17.3
Fewer members	20.4	28.0	30.4	17.5[5]	17.0

[1]Households classed as poor in both 1974 and 1979.
[2]Households classed as poor in 1974, but not poor in 1979.
[3]Households classed as not poor in 1974, but poor in 1979.
[4]Households classed as not poor in either 1974 or 1979.
[5]Estimate based on fewer than 10 unweighted observations.

1979. First, about a quarter of these households reported that the number of members working declined between 1974 and 1979. This withdrawal from the work force was generally associated with retirement. Second, among those households where members' employment status was unchanged over the 5-year period, total hours worked declined. A health condition lasting part of 1979 seemingly explained the reduction in hours worked between 1974 and 1979. Third, among the 1,520 households having no member working in the area's labor force, reduced survivor benefits seemingly caused entry into the poor group for many households headed by recently widowed women; there were too few male heads of household in this group to draw any conclusions about why they entered the poor category.

Summary on Poverty

For some households, employment gains reduced poverty. For others, employment gains will not necessarily reduce poverty or reduce dependence upon public assistance programs. Many poor households were headed by an elderly person who, in all likelihood, would not seek employment even if it were available. Thus, the traditional public assistance programs and Social Security should provide economic support for the elderly within a growth area. These programs did, in fact, assist some households headed by elderly persons to escape poverty. Promoting employment growth will not necessarily lift out of poverty households containing the "working poor," particularly if these persons have limited education or job skills. Thus, based on the nine-county study area's findings, a supplemental income or wage subsidy program will be needed to improve the economic plight of the working poor. However, employment gains assisted some households in their escape from poverty. This group was about 2 percent of all the households analyzed, supporting the finding that the area's employment growth had but a limited effect on poverty.

Implications

Employment growth, in and of itself, had positive effects on the Kentucky study area, accommodating population growth by providing jobs for persons in newly formed households and existing households which moved into the area after 1974. The growth did not adversely affect existing longer term resident households as a group because they were able to maintain their income status. The employment growth in the area's economy provided new services to the community and, in general, transformed the area from an environment of economic decline to one of economic growth.

Results from this study demonstrate why overall employment growth probably will not benefit all households or residents in a given area. For example, our study area had an elderly population typical of that in many other

nonmetro areas. Unlike younger residents, older people compete less often in the labor market and are usually unable to take advantage of new job opportunities. The income transfer system seemed to be important in maintaining the elderly's income status. For household members already in the labor force, economic expansion probably will not substantially raise their income levels unless labor is in short supply and area wage rates increase. During the study period, some longer term resident households did benefit as additional members entered the labor force. But, other households had members who quit working or reduced the number of hours at work for any number of reasons including retirement. Thus, household composition and employment dynamics explain why the average income status did not change significantly between 1974 and 1979.

Economic development measured by employment growth is frequently proposed as a means of improving the economic well-being of all rural residents, particularly the poor. Employment growth during the seventies in the study area was impressive, but it was not sufficient to change the relative income status of the area's households *(15)*. Understanding the relationship between employment growth and relative income status is particularly important because many Government programs use relative income as an indicator of need for public attention.

Efforts by local governments or community organizations to expand employment need not adversely affect relative income status among vulnerable households within the population if an income transfer system remains in place. Expanding employment, while enabling some households to escape poverty, will not necessarily reduce overall poverty because a substantial share of the poor cannot work because of age or job-limiting illness or disability. If an economic policy is to reduce the relative economic status differences among household subgroups, particularly households headed by women and households considered to be poor, maintaining current income security programs is necessary while stimulating employment growth.

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Appendix: Regression Models

The dependent variable was a ratio of a household's nominal income divided by an appropriate U.S. official poverty threshold. The change in a household's relative income status was defined as the 1979 income status ratio minus the 1974 income status ratio.

Regression Model 1

Multiple regression model 1, which was used to identify factors that influenced household income status, had the general form of

$$CHWBR = f(CHS, CE, SI, I74, RES, D, EC) \quad (1)$$

where:

- CHWBR = change in household relative income status,
- CHS = household structural variables,
- CE = employment-related change variables,
- SI = unearned-income source changes,
- I74 = household income levels in 1974,
- RES = residency status of head of household,
- D = demographic characteristics of head of household, and
- EC = employer (or establishment) characteristics.

This model focused only on the linked households.[1] The regression model was used only to identify significant associations between the dependent and independent variables. Because our concern was with only those independent variables that greatly influenced changes in household relative income status, we will only focus on these variables in the discussion below.

The independent variables which were significantly associated with changes in household income status were: CHGSIZ, change in number of household members living within the household; CHGEAR, change in the employment status of household members; CHGHRS, changes in total annual hours worked by household members whose employment status did not change between 1974 and 1979; CHGHWG, change in real wage of the head of the household; and RTHI5, household real income level in 1974 that was $19,000 and over.[2] All change variables (prefix CHG _____) were measured in a continuous manner as opposed to a discrete (0, 1) variable often used in regression analysis. Thus, changes in these variables could have a negative value, zero (0) for a no change situation, or a positive value. The variable RTHI5 was a discrete (0, 1) variable. A one (1) designated, for example, the household's 1974 real income (in 1979 dollars) as $19,000 or over (RTHI5).

Size of household was one variable used to reflect household structure. An increase in household size (CHGSIZ) represented a decline in income status over the 5-year period. Relative income status increased when there were fewer household members being supported in 1979 than 1974. Several variables were used in the model to reflect employment and employment-related changes. Absolute change in number of household members employed (CHGEAR) between 1974 and 1979 improved relative income status when the number working increased.

Among households where members were employed but CHGEAR was equal to zero, an increase in hours worked (CHGHRS) helped raise the household's income status. When the household head's real wage (CHGHWG) increased, the household's relative income status also increased. The variable RTHI5 was one of several variables used to measure changes in income status accruing to households with different levels of 1974 household income expressed in real (1979) dollars.

The income status of households in RTHI5 on average significantly declined over this period compared with the omitted group of households. However, their loss was highly related to a household member who left the labor force for any number of reasons.

These five variables were highly significant at the 99-percent level based on the regression model results. The linked household regression results are shown in appendix table 1. For the regression model, a rescaling of the expanded estimates was necessary to overcome the problem of generating greatly reduced standard errors on the coefficients (7). A rescaling factor was obtained by dividing the unweighted (raw) observations by the expanded estimate for a particular population subgroup being considered in the analysis. The expanded observations were multiplied by the rescaling factor.

[1] See glossary for definition of "linked households."

[2] The 1974 weekly wages of the head of the household were transformed to 1979 dollars using the national CPI, and the household's 1974 income was similarly adjusted to 1979 levels using the CPI.

Regression Model 2

The second multiple regression model had the same general form of the first model, but it differed in two important ways. First, the employer characteristics (EC) were dropped as independent variables. Second, the nonlinked households were added to determine if their inclusion altered the significance of the remaining variables. All variables significant in model 1 were significant in model 2. However, two additional variables in model 2 were significant in explaining changes in income status (app. table 2). These two variables were households headed by women (HDSEX) and the number of households reporting "other income" in 1979 but none in 1974 (INCOTI).

The variables HDSEX and INCOTI were discrete (0,1) variables. A one designated a household headed by a woman (HDSEX) and a household reporting "other income" in 1979 but none in 1974 (INCOTI), respectively.

The variable INCOTI was one of several variables used to measure the effects from sources of unearned income on household income status. However, the actual numbers of households where INCOTI equalled one was too small to be included in the analysis presented in the text.

Sex of head (HDSEX) was one of two variables used to reflect household structure. There was a substantial income gap between households headed by men and women. This variable was used in the analysis to test whether or not this gap widened when employment opportunities expanded between 1974-79. Women heads of households are often viewed as being unable to take advantage of an increase in employment opportunities. The finding indicates that the gap did widen only between households headed by men and those headed by women who were recently widowed over the study's 5-year period. Thus, compositional changes placed these households headed by women in a relatively poorer economic position.

Appendix table 1—Results of regression analysis on changes in household income status[1]

Variable	Regression coefficients	
	Unstandardized[2]	Standardized
Household structure:		
Change in size of households, absolute number	−0.4402[3]	−0.2620
Households headed by women, discrete 1, 0 value; 0 = male head; 1 = female head	−.5750	−.0024
Employment related:		
Change in employment status of persons in the household, continuous value	.3665[3]	.1783
Change in total annual hours worked by all household members where the employment status remained unchanged, continuous value	.0004[3]	.1540
Change in head's real weekly wage, measured continuously in dollars	.0018[3]	.1391
Change in head's occupation among four major occupational groups, discrete 1, 0 value; 1 = change, 0 = no change	−.3283	−.0982
Sources of unearned income:		
Household reported transfer payments in 1979 but not in 1974	.2397	.0402
Household reported transfer payments in both years, no change	.0978	.0190
Household reported transfer payments in 1974 but not in 1979	−.5813	−.0548
Household reported other income in 1979, none in 1974	.5875	.1186
Household reported other income in both years	.4285	.0991
Household reported other income in 1974, none in 1979	−.4423	−.0391
Household income status, 1974 (1979 dollars):		
$ 3,519 or less	.3932	.0544
$ 3,520-$7,799	.4394	.1093
$12,000-$18,999	−.2589	−.0826
$19,000 or more	−1.1341[3]	−.3194
Head's residency status:		
Head was early immigrant[4]	−.0264	−.0071
Characteristics of head of household:		
Age, under 35 years	.2142	.0660
Age, 55-64 years	.1035	.0247
Age, 65 years and older	−.7000	−.1151
Less than high school education	−.3630	−.1215
High school education	−.3837	−.1284
Change in head's health status, discrete value; −1 = good in 1974 but poor in 1979, 0 = no change, +1 = poor in 1974 but good in 1979	−.2610	−.0768
Establishment (employer) characteristics:		
Average weekly wages paid full-time employees—		
Less than $181	−.1679	−.0547
$181-$221	.1455	.0459
Type of establishment—[5]		
Goods-producing	−.2645	−.0857
Services-producing	−.1608	−.0521
Size of establishment—		
1-19 paid employees	−.0334	−.0110
Employment change—		
New establishments	.2689	.0477
Growth establishments	.2181	.0716
Regression constant term	.1006	
Adjusted coefficient of multiple determination (R^2)	.2048	
F value[6]	4.4017[3]	
Number of original or unweighted observations	437	

[1]Results based on those households linked with employers and excludes households not reporting income for any year.

[2]Regression values expressed in terms of the dependent variable as the difference in relative household income status between 1974 and 1979.

[3]The variable was significant at the 99-percent level of confidence.

[4]The head of the household moved to the study site between January 1, 1965, and December 31, 1974.

[5]Goods-producing establishments included manufacturing, construction, and mining industries. Service-producing included establishments in the private sector engaged in wholesale and retail trade; TCPU (transportation, communications, and public utilities); FIRE (finance, insurance, and real estate); and all other services, including hotels, personal, business, amusement, health care, legal practice, education, and social service.

[6]Tests the hypothesis that all parameters are zero except for the intercept.

Appendix table 2—Results of regression analysis on changes in household income status[1]

Variable	Regression coefficients	
	Unstandardized[2]	Standardized
Household structure:		
Continuous variable measuring absolute change in number of persons in the household	−0.3750[3]	−0.2359
A discrete variable where a female head of household equals a one	−.3909[3]	−.1109
Employment:		
Continuous variable measuring absolute change in employment status of persons in the household (CHGEAR)	.3771[3]	.1756
Continuous variable where CHGEAR = 0, measuring change in total annual hours worked by members in the household	.0004[3]	.1700
Continuous variable measuring absolute change in weekly wage rate of head of household	.0027[3]	.1219
Discrete variable measuring change in occupation of head of household	−.2195	−.0672
Unearned sources of income:		
Household reporting transfer payments in 1979 but not in 1974	−.0268	−.0078
Household reporting transfer payments in both years	.0591	.0220
Household reporting transfer payments in 1974, not in 1979	−.2916	−.0349
Household reporting other income in 1979, none in 1974	.5036[3]	.1131
Household reporting other income in both years	.3377	.0984
Household reporting other income in 1974, none in 1979	−.2672	−.0281
Household income in 1974 (1979 dollars):		
$ 3,519 or less	.3139	.1010
$ 3,520-$7,799	.2052	.0663
$12,000-$18,999	−.2533	−.0798
$19,000 or more	−1.1075[3]	−.2803
Head's residency status:		
Head was early inmigrant[4]	.0470	.0138
Characteristics of head of household (discrete variables):		
Age, under 35 years	.1144	.0332
Age, 55-64 years	−.0131	−.0036
Age, 65 years and older	−.1791	−.0627
Less than high school education	−.3221	−.1166
High school education	−.3176	−.0984
Change in head's health status, discrete value; −1 = good in 1974 but poor in 1979, 0 = no change, +1 = poor in 1974 but good in 1979	.0829	.0354
Regression constant term	.3623	
Adjusted coefficient of multiple determination (R^2)	.2006	
F value[5]	6.4252[3]	
Number of original or unweighted observations	520	

[1]Results based on existing longer term resident households, excluding households which did not report household income for 1974.
[2]Regression values expressed in terms of the dependent variable as the difference in relative household income status between 1974-79.
[3]The variable was significant at the 99-percent level of confidence.
[4]The head of the household moved to the study site between January 1, 1965, and December 31, 1974.
[5]Tests the hypothesis that all parameters are zero except for the intercept.

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